OTB

OWN THE TECHNICAL BASELINE™

THE NEXT GENERATION IN INFORMATION AGGREGATION AND ANALYSIS

Program managers and portfolio managers for all kinds of systems must manage to avoid cost overruns, schedule delays, system performance problems, and sustainability, maintenance, and logistics issues. For most programs, easy access to and assessment of data and information related to the system is important to accomplish these goals. Transparency into the technical baseline, including insight into system performance and review of relevant documentation for the program, is critical to a healthy system.

Riverside Research has provided systems engineering, operations, and sustainment support to programs like these for more than 40 years, resulting in dozens of comprehensive, in-depth sustainment, modernization, and engineering reports on multiple systems. Recognizing that collecting and analyzing the information needs, as well as generating reports, was both manpower-intensive and had to be repeated frequently to maintain the baseline, we invested in a software system to allow for aggregation of all information related to a system that helps create a dynamic, global view of a system's sustainment needs. **Own the Technical Baseline™ (OTB) rapidly ingests diverse data such as maintenance logs, parts diagrams, instruction manuals, or indentured parts lists to provide a comprehensive understanding of the system, including analysis of areas such as sustainment costs and risks. OTB is the ultimate enabler for "owning the technical baseline."**

MAXIMIZE PERFORMANCE; MINIMIZE TOTAL COST OF OWNERSHIP

The OTB software is built on open source, off-the-shelf technologies that are modern and used in many enterprise and commercial systems. Following modern software development lifecycle best practices, using smart and extensible design, and with a current focus on microservices and containerization, the OTB system is extremely adaptable to different types of data sets, and can be deployed on different types of networks and platforms, including classified options and the most modern directions such as AWS GovCloud. The OTB platform provides enough flexibility to be vendor agnostic, allowing it to ingest data across varying standards and databases with simple interfaces to the data storage device or artifact. Once the data is ingested, the application services are easily added and configured based on user requirements.
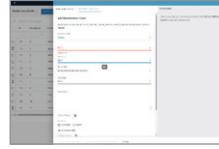
OWN THE TECHNICAL BASELINE™

DEEP UNDERSTANDING OF SYSTEM DESIGN AND PERFORMANCE

The starting point for owning the technical baseline is the evaluation of all system engineering data. This includes:

- Requirements and design artifacts
- Hardware drawings and parts databases
- Development test and operational data
- O&M and vendor manuals
- Training packages and lesson materials

After ingesting these artifacts or databases, OTB will extract text and data, add metatags, and provide ability for quality assessments. The overall view illustrates to the user where the gaps are, status of delivery, and health of their configuration baseline.

ROBUST, DETAILED RELIABILITY MODELS

Reliability, Maintainability, and Availability (RMA) are constantly changing as the system ages or components are upgraded. OTB contains high fidelity RMA models for all the systems it supports, down to the component level. Anytime its failure database is updated, the tool suite automatically re-computes predicted component life, evaluates spares availability, and identifies when the system will become degraded or non-operational.

SYSTEM PERFORMANCE TRENDS

To be able to assess the health of a system, there must be established quantifiable-key performance parameters. The metrics from these parameters are collected periodically to assess health. OTB brings in the analysis tools and results for easy searching and immediate feedback on the current state of the system. By retaining all previous data, it can identify downward trends that can potentially prevent catastrophic failures if detected early enough.

ONSITE MAINTENANCE SUPPORT

When system components fail in the field, maintainers must troubleshoot the problem and deliver corrective action. With OTB's Mobile Maintenance Unit – MViz, the maintainer has immediate access to pertinent information to quickly bring the system back online. MViz provides access to Technical Orders, drawings, historical maintenance logs, design documentation, and spares. MViz also offers an efficient means to document and archive the entire maintenance process.
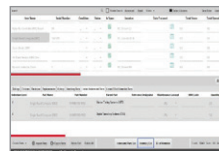
PREDICTIVE ANALYTICS

The data in OTB offers the perfect setting to unleash the power of AI/ML tools to predict system failures before they happen. Modern weapon systems are highly instrumented. Like an IoT network, hardware and software subsystems continually monitor health/status and send this information to a centralized reporting point. The data science workspace, Predictor, in OTB provides users with the ability to analyze the causal relationships between the status messages and actual failures. Using labeled historical data for training, supervised learning algorithms can identify the leading failure predictors. With this vital information, O&M teams can schedule preventive maintenance to reduce costly downtime.

CENTRALIZED INFORMATION ACCESS

Collecting all the data for a system, or even multiple systems, into OTB allows for much more efficient and streamlined access by users. This supports more direct querying, sorting, and filtering to allow for refinement of the data down to the set that a user wants to specifically review. The data itself can be quickly organized and categorized, including using custom metadata, to provide for review and gap analysis of the system information. This also facilitates visualization of relationships and linkages of data, such as parts and documents, across the system to allow for greater context, insight, and navigation efficiency. All of this helps management of the system's technical baseline, reducing system engineering review times, streamlining of the assessment and validation of requirements, and providing on-demand analysis reports and artifacts for areas like critical parts, sparing outlook, and forecasts for ownership costs. OTB features and services are designed to be as flexible and extensible as possible, allowing OTB to be used for almost any kind of system and data with minimal configuration or updates.